

# TCF-142-RM Series

RS-232/422/485 to fiber slide-in modules for the NRack System™



## Features and Benefits

- Extends RS-232/422/485 transmission up to 40 km with single-mode or 5 km with multi-mode
- 1 or 150 kilo-ohm adjustable pull high/low resistor
- Supports ring and point-to-point transmission

## Certifications



## Introduction

The TCF-142-RM Series slide-in modules are serial-to-fiber converters that work with the TRC-190 chassis. The modules convert from the RS-232, RS-422, or RS-485 signal to a fiber-optic signal.

## Automatic Baudrate Detection

The TCF-142-RM Series can automatically detect the serial baudrate. This is an extremely convenient feature. Even if a device's baudrate is changed, the signal will still be transmitted through the media converter without any problem.

## Specifications

### Serial Interface

No. of Ports	2			
Serial Standards	RS-232, RS-422, RS-485			
Baudrate	50 bps to 921.6 kbps (supports non-standard baudrates)			
Flow Control	ADDC® (automatic data direction control) for RS-485			
Optical Fiber	TCF-142-M-SC-RM: 100BaseFX ports (multi-mode SC connector) TCF-142-M-ST-RM: 100BaseFX ports (multi-mode ST connector) TCF-142-S-SC-RM: 100BaseFX ports (single-mode SC connector) TCF-142-S-ST-RM: 100BaseFX ports (single-mode ST connector)			
		Low-Speed Fiber Module	Multi-Mode	Single-Mode
		Fiber Cable Requirements	50/125 μm, 800 MHz	G.652
			62.5/125 μm, 500 MHz	
		Typical Distance	5 km	40 km
	Wavelength	Typical (nm)	850	1310
		TX Range (nm)	840 to 860	1290 to 1330
		RX Range (nm)	800 to 900	1100 to 1650
	Optical Power	TX Range (dBm)	0 to -5	0 to -5
		RX Range (dBm)	0 to -20	0 to -25

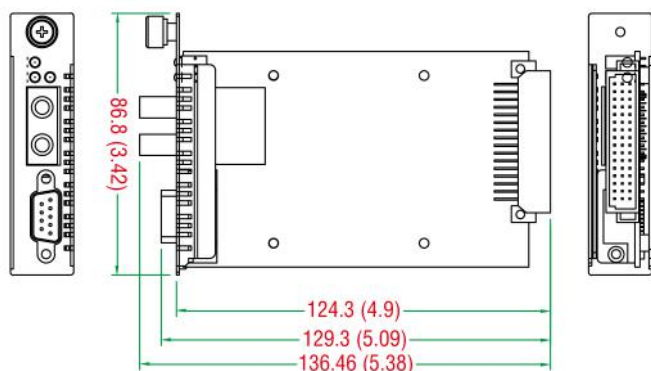
	Low-Speed Fiber Module	Multi-Mode	Single-Mode
	Fiber Cable Requirements	50/125 μm, 800 MHz	G.652
		62.5/125 μm, 500 MHz	
	Link Budget (dB)	15	20
	Dispersion Penalty (dB)	1	1
<p>Note: When using a power meter to measure the fiber TX power, set the baudrate to 9,600 bps and send data (00, ..., 0h) to the serial converter's serial port.</p>			
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms		
RS-485 Data Direction Control	ADDC® (automatic data direction control)		
Terminator for RS-485	N/A, 120 ohms, 120 kilo-ohms		
<b>Serial Signals</b>			
RS-232	TxD, RxD, GND		
RS-422	Tx+, Tx-, Rx+, Rx-, GND		
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND		
RS-485-2w	Data+, Data-, GND		
<b>Power Parameters</b>			
Input Current	150 mA @ 12 VDC		
Overload Current Protection	Supported		
Power Consumption	150 mA @ 12 VDC		
<b>Physical Characteristics</b>			
Housing	Metal		
IP Rating	IP30		
Dimensions	86.8 x 136.5 x 21 mm (3.42 x 5.37 x 0.83 in)		
Weight	105 g (0.23 lb)		
<b>Environmental Limits</b>			
Operating Temperature	0 to 60°C (32 to 140°F)		
Storage Temperature (package included)	-20 to 75°C (-4 to 167°F)		
Ambient Relative Humidity	5 to 95% (non-condensing)		
<b>Standards and Certifications</b>			
EMC	EN 55032/24		
EMI	CISPR 32, FCC Part 15B Class A		
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF		
Environmental Testing	IEC 60068-2-1 IEC 60068-2-2		

	IEC 60068-2-3
Safety	EN 60950-1, IEC 60950-1
Vibration	IEC 60068-2-6
<b>MTBF</b>	
Time	514,926 hrs
Standards	Telcordia (Bellcore), GB
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>Package Contents</b>	
Device	1 x TCF-142-RM Series converter
Documentation	1 x quick installation guide 1 x warranty card

## Dimensions

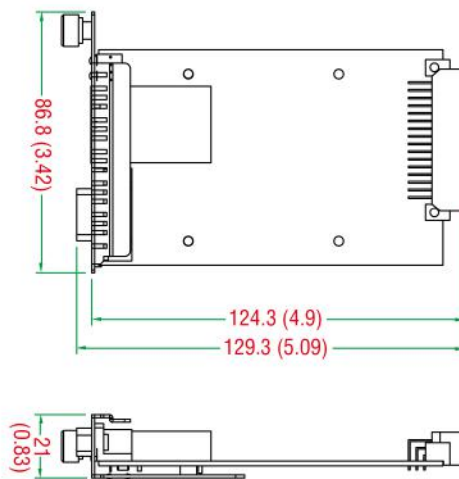
### TCF-142-M/S-ST-RM Series

Unit: mm (inch)



### TCF-142-M/S-SC-RM Series

Unit: mm (inch)



## Ordering Information

Model Name	Fiber Module Type
TCF-142-M-ST-RM	Multi-mode ST
TCF-142-M-SC-RM	Multi-mode SC
TCF-142-S-ST-RM	Single-mode ST
TCF-142-S-SC-RM	Single-mode SC

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